

Title (en)
SYNCHRONOUS RELUCTANCE MACHINE

Title (de)
SYNCHRONER RELUKTANZMOTOR

Title (fr)
MACHINE À RÉACTION SYNCHRONE

Publication
EP 3334017 A1 20180613 (EN)

Application
EP 17834853 A 20170721

Priority
• RU 2016130689 A 20160726
• RU 2017000542 W 20170721

Abstract (en)
The present invention relates to electrical engineering, particularly to synchronous reluctance machines, and can be used in electrical drives for machines and mechanisms, as well as in electrical power generators. The synchronous reluctance machine comprises a stator with a winding arranged within stator slots, and a rotor mounted to provide a gap between the rotor and the stator, the rotor being rotatable with respect to the stator and comprising radially alternating magnetically permeable layers and flux barriers, wherein each barrier comprises at least one peripheral end extending towards the circumferential rotor surface and the angular pitch of the peripheral ends decreases in circumferential direction from the peripheral ends of the outer barriers towards the peripheral ends of the deepest inner barriers among at least three circumferentially sequential peripheral ends, wherein at least two of said ends are inner barrier ends. This results in improved energy characteristics of the reluctance machine, in particular power factor, efficiency and specific power thereof, for the same number of flux barriers. This is further achieved by a synchronous reluctance machine comprising a stator with a winding arranged within stator slots, and a rotor mounted to provide a gap between the rotor and the stator, the rotor being rotatable with respect to the stator and comprising radially alternating magnetically permeable layers and flux barriers, the gap is increased by 15-400% between the surface of the most external magnetically permeable layer and the stator compared to other sections of the gap.

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Cited by
CN110535264A; CN114337017A; CN110149014A

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